

Appendix D

Treatment Methods

Integrated Pest Management (IPM) combines various management strategies to deal with pest problems. Advocates of IPM recognize that reliance on any single form of pest management does not provide optimal results. The methods described below refer to the practices outlined in the proposed action in this EA.

Manual

Manual management methods include hand-pulling and the use of small non-gas powered hand tools.

Mechanical

Mechanical removal will consist of using chainsaws for removal of vegetation with hand crews on foot. Mowers could be used for perennial pepperweed and tree extractors might be feasible where road and slope conditions are favorable. Heavy machinery will not be employed due to the rough and narrow terrain with potential for soil loss and subsequent sedimentation to the Rio Grande. The proposed action is not limited to this form of control; as such, any new mechanical equipment or treatment method that would not significantly affect soil resources that might become available would be considered.

Prescribed Fire

The use of prescribed fire to control weeds may be utilized as an initial or follow-up treatment. As a tool for controlling weeds, specific objectives and tactics would be outlined in the implementation plan related to timing and site preparation (Rice 2004). It would be conducted according to a) the availability of firing and holding resources, b) reasonably low fire activity, and c) seasonal weather conditions that would be favorable to achieve the desired objectives. The specifics of the prescribed fire would be determined by the fuel type and the weed densities associated with the project area and outlined in the necessary Burn Plan. The objectives required for a successful burn would include: a) saltcedar reduction and control of greater than 85%, b) sustained control of re-growth, c) invigorate native vegetation, and d) firefighter and public safety.

Most prescribed burning would be in the form of piles of removed vegetation (slash). Burn piles would be no larger than 4 feet high and 6 feet wide. BLM fire personnel will specify areas for piling and burning.

Herbicide

After considering all potential methods, if a non-herbicide method of control is decided, the proposed action is to use Habitat[®] (Imazypry) as the approved herbicide for vegetation control in and around aquatic environments, in accordance with EPA approved label recommendations. Treatments will meet or exceed individual state label standards. Where vegetation is a mix of native/non-native species, non-target vegetation such as willow and cottonwood will not be treated. The treatments prescribed to certain areas depend on a number of variables. Some of these are:

1. Treatment objective (removal or reduction).
2. Accessibility, topography, and size/density of the treatment area.
3. Location of sensitive areas in the immediate vicinity.
4. Anticipated costs and equipment limitations.

Herbicide may be applied directly to the foliage of the plant, to the basal stem area (either to the cut stump or bark), or by injection. After removing aerial growth of saltcedar trees greater than 2" in diameter with chainsaws, the remaining stump would be cut flush (at ground level) and chemically treated within 15 minutes or sooner with Habitat® (Imazypry). There could be some degree of resprouting from the remaining stumps and root systems of saltcedar plants initially treated, as well as the establishment of pioneer plants as unoccupied habitat becomes available. Therefore, retreatment would be needed to ensure successful control of the weed population.

Herbicide application is more effective when utilized as the tree is storing reserves in into its root system, typically during fall and winter (McDaniel & Duncan 1997). Habitat® (Imazypry) would be applied by painting with a brush onto the stump, or by injection into the bark, for transport to the root system. Retreating new growth or resprouts would be conducted on a 2-5 year basis, depending on the success of the initial treatment of the herbicide.

No aerial application of herbicides would be authorized. Applications will be made on a patch-specific basis due to sensitive riparian plant communities, open water, and recreational issues necessitating a more precise application to the target plants. All populations found and/or treated will be monitored and re-vegetated with native species as necessary to prevent re-invasion. Applicators will be, or be supervised by, certified pesticide applicators and herbicide use will be in accordance with BLM Handbook H-9011-1 and the current label. Only Habitat® (Imazypry) will be authorized for use. All label requirements would be strictly adhered to.

Herbicide applications will be scheduled and designed to minimize potential impacts to humans, animals and nontarget plants, while remaining consistent with the objective of the vegetation treatment program. The rates of application depend on the target species, presence and condition of nontarget vegetation, depth to the water table, presence of other water sources, and other label requirements. Treatment areas will be signed and notices will be given to the public to avoid the area. For herbicide treatment of saltcedar, very small quantities of herbicide will be used at any one time, typically, 1 part herbicide to 2 parts water at a 0.1% solution to treat 1-10 acres annually, and all standard operating procedures and bureau-wide requirements will be followed (Renz 2000).

Biological

The use of biological control within the proposed action would be to utilize animal control on identified noxious weeds. The BLM does not limit itself to this type of biological control. As other forms of biological control may present themselves in the future, the BLM may decide to use one of those forms following the appropriate environmental analysis.

Goats have been effectively utilized to control such invasive weeds as leafy spurge (*Euphorbia esula*), Canada thistle (*Cirsium arvense*), bull thistle (*Cirsium vulgare*), hemlock (*Cicuta douglasii*) and starthistle (*Centaurea* spp.). The BLM would consider the use of goats or other mammals as a means to control or eradicate saltcedar or other noxious weeds as a part of this proposed action. Goats can be used either as an initial or as post-treatment to remove/reduce the number of re-sprouts (Frost & Launchbaugh 2003). The BLM would not limit itself to goats but would utilize any approved method of mammal control on saltcedar and other noxious weeds in the future where the effects are not significantly different from those analyzed in this EA.

Restoration

Experience has shown that riparian areas normally re-vegetate naturally within two (2) years following treatment (Taylor & McDaniel 1998). However, if efforts were needed to ensure reclamation by native vegetation, restoration would include re-seeding with native plant materials and seed certified weed-free. The re-seeding would utilize seeds of only native plant species indigenous to the project area from a licensed and approved seed source. Native seed would be applied using a seed spreader by hand. BLM will not limit itself to this method, but would utilize low-impact methods for the sowing of seed.

Tree planting would be conducted by drilling a hole to the water table using a gas-powered auger, planting a pole or whip of native vegetation and backfilling manually with material from the excavated hole. Pole planting would utilize native tree species of the local riparian zone, including Rio Grande and narrowleaf cottonwood, coyote willow, New Mexico olive and box elder, among others.